

DOE Solid-State Lighting Portfolio

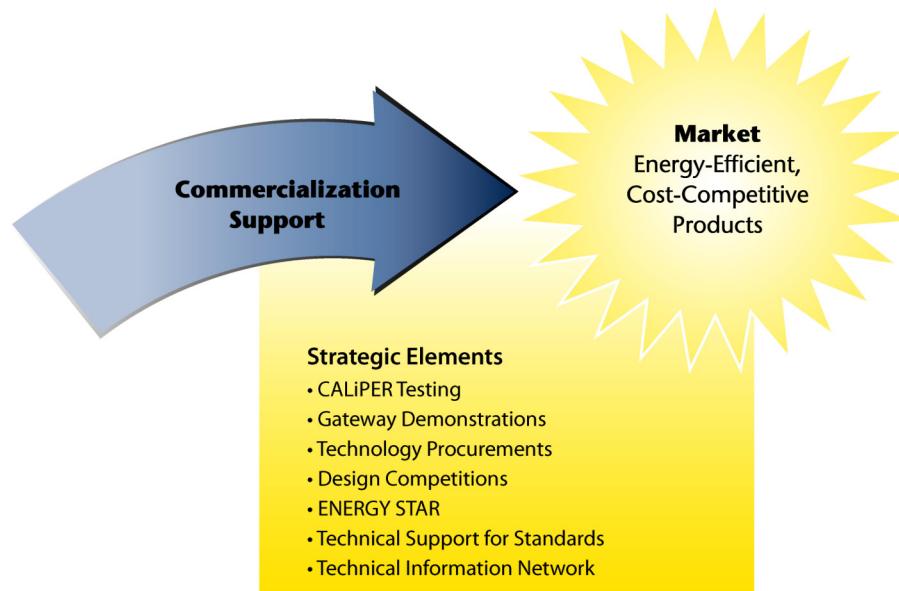
Guiding Market Introduction of High Efficiency, High Performance SSL Products

The U.S. Department of Energy (DOE) has developed a comprehensive national strategy to guide solid-state lighting (SSL) technology from lab to market. To leverage DOE's \$100 million investment in SSL technology research and development (R&D), and to increase the likelihood that this R&D investment pays off in commercial success, DOE has developed a commercialization support plan. The plan focuses DOE resources on strategic areas to move the SSL market toward the highest energy efficiency and the highest lighting quality.

DOE's plan draws on key partnerships with the SSL industry, research community, standards setting organizations, energy efficiency groups, utilities, and others, as well as lessons learned from the past. Commercialization support activities are closely coordinated with research progress to ensure appropriate application of SSL products, and avoid buyer dissatisfaction and delay of market development. DOE's role is to:

- Help consumers, businesses, and government agencies differentiate good products and applications
- Widely distribute objective technical information
- Coordinate SSL commercialization activities among federal, state, and local organizations
- Communicate performance targets to industry

DOE SSL PATHWAYS TO MARKET



DOE Commercialization Support Plan

DOE's plan focuses federal resources on strategic areas that foster the market for high-performance solid-state lighting products.



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

DOE SSL Pathways to Market

CALiPER. Using test procedures currently under development by standards organizations, DOE's SSL testing program provides unbiased information on the performance of a widely representative array of commercially available SSL products for general illumination. Test results guide DOE planning for R&D, the Lighting for Tomorrow design competition, technology procurement activities, and ENERGY STAR®, in addition to furnishing objective product performance information to the public and informing the development and refinement of standards and test procedures for SSL products.

www.netl.doe.gov/ssl/comm_testing.htm

Technology Demonstration Gateway. Demonstrations showcase high performance LED products for general illumination in a variety of commercial and residential applications. Demonstration results provide real-world experience and data on state-of-the-art SSL product performance and cost effectiveness. Performance measurements include energy consumption, light output, color consistency, and interface/control issues. The results connect DOE technology procurement efforts with large-volume purchasers and provide buyers with reliable data on product performance.

www.netl.doe.gov/ssl/techdemos.htm

Technology Procurement. Technology procurement is an established process for encouraging market introduction of new products meeting certain performance criteria. DOE has successfully used this approach with other lighting technologies, including sub-CFLs and reflector CFLs. Technology procurement will encourage adoption of new SSL systems and products that meet established energy efficiency and performance criteria, and link these products to volume buyers and market influencers.

Lighting for Tomorrow. In partnership with the American Lighting Association and the Consortium for Energy Efficiency (CEE), DOE sponsors Lighting for Tomorrow, a design competition that encourages and recognizes excellence in design of energy-efficient residential light fixtures. In the 2007 competition, 24 companies submitted 45 entries in the SSL category, with winning fixtures including a downlight, a desk lamp, an undercabinet fixture, and an outdoor wall lantern. www.lightingfortomorrow.com

ENERGY STAR for SSL. ENERGY STAR is a voluntary energy efficiency labeling program identifying products that save energy, relative to standard technology. Final ENERGY STAR criteria for SSL luminaires were released in September 2007, with an effective date of September 2008, contingent on related standards and test procedure finalization. www.netl.doe.gov/ssl/energy_star.html

Technical Support for Standards. LEDs differ significantly from traditional light sources, and new test procedures and industry standards are needed to measure their performance. DOE provides national leadership and support for this effort, working closely with the Illuminating Engineering Society of North America, the National Electrical Manufacturers Association, the Next Generation Lighting Industry Alliance, the American National Standards Institute, and other standards setting organizations to accelerate the standards development process, facilitate ongoing collaboration, and offer technical assistance. National standards and rating systems for new SSL products are expected to be issued in early 2008. www.netl.doe.gov/ssl/standards_dev.html

TINSSL. DOE's Technical Information Network for SSL increases awareness of SSL technology, performance, and appropriate applications. Members include representatives from regional energy efficiency organizations and program sponsors, utilities, state and local energy offices, lighting trade groups, and other stakeholders. The Northeast Energy Efficiency Partnerships and the CEE support DOE in this effort, collaborating with DOE to produce SSL information and outreach materials, host meetings and events, and support other outreach activities. www.netl.doe.gov/ssl/technetwork.htm